metre and 0*52 cubic metre excess of H, and 0*26 and 0*79 cubic metre respectively too little N.
It shows that in both cases too much steam and too little air were employed in the production of the steam-air gas.
In consequence, the temperature in the zone of steam-air gas production was too low; it had even possibly given rise to places in the fire through which air passed undecomposed, later to burn with the distillation gas.
Combustion of the G-as, however, must be regarded as the cause of the Marked Increase of Volume of the Gas in the overwhelming majority of Bad Producer Gases ; which also furnishes the explanation of the considerable diminution of the Combustible Value.
« This phenomenon, namely, combustion of a portion of the distillation gas, occurs very frequently, not to say always, in old producers, which work with feeble steam jet blasts, and the explanation here is simple. Thanks to the feeble blast pressure employed, only a shallower bed of fuel can be worked, whereby the possibility is presented of free oxygen reaching the upper surface of the same. But fuel lies here, the degasi-fication of which is incomplete and is often only commencing, even; and its products of degasification then at the moment of their origin become greedily destroyed. In this manner, the most valuable constituents of the bitumen are lost.
The last figures in the foregoing calculation show that for bad gas qualities the method employed fails for quantitative purposes for the steam-air gas production, because in the example considered the figures for the H content of the steani-air gas fluctuated between 0'46 and 0*69 cubic metre, thus afc best bringing the qualitative proof that in the main too much steam had entered into employment.
Under the circumstances, it does not also even allow this to be proved.
Let us assume that yet more air was forced into the gas space, and that in the foregoing gas, Example II.: (0*5 cubic metre C02, 1-28 cubic metre CO, 0*08 cubic metre'